Comments on Wireless Hearing Aid Compatibility ("HAC").
Docket Number 06-203

It used to be "One out of ten Americans are Hard of Hearing whether they know it or not". With population aging, increased daily noise, and kids using 105 decibel iPods, one current number is one third. One third of the people, (or, at least, one out of ten), the HoH (Hard of Hearing), need better access to "Basic Phone Service". Morally and legally, cell phones must be accessible.

Not all HoH require TTY's, etc. Most of this third or tenth of HoH people are "Mild-to-Moderate" in the voice range of ~35-45 db. This is a separate culture with different challenges than HoH who are "Severe-Profound" or Deaf.

Some may require an external phone amplifier, amplified phone, or magnetic coupling to a H.A.(Hearing Aid). If there is access / compatibility, "if it works", most HoH with H.A.s that have a coil can hear on the phone and a T rating is usefull. In other words, most people do not need fancy high-tech "bells and whistles", we just need to "hear on the phone". {As an indication of how I feel about "Basic Phone" (and security), "contacts" is kept empty.}

Extras are not wanted by everyone. Many times extras wind up not being used. Extras raise the price. There is more hard and software. It is wasted purchase. In engineering and Recycling, "Less Is More."

H.A.'s are basically just a microphone, amplifier, and speaker. Headphones in the monitor jack of a tape recorder can do that. The microphone picks up all noise and "Life is like a movie with a bad soundtrack.". N.A.C. (Non-Audio Coupling) is required. Mic input is worse than useless: it gives false hope. Telecoil is the current "mostly workable" mode.

Strong magnetic coupling is essential. The coil must be specifically designed to transmit magnetically, powerfully, without surroundings or shielding. A desirable option (similar to silent/buzzer) is "No audio, COIL ONLY". Less audio conserves the battery and is less noise

for other people.

Magnetic coupling to headphone/mic sets, or just a headphone or neck loop or plain coil looped over the earlobe (using the phone's mic), allows the cell phone to be away from the H.A. so there is less interference between phone and H.A. Because the phone can be looked at and buttons can be pushed while "on the phone", a headset also allows timely response to automated answering systems.

I prefer a landline, which I have at home, and with public pay phones getting rare, I decided to get a cell phone for away from home. The cell is only for automobile breakdowns and a few phone calls. Because of that and since I am low income, "working poor" with other disabilities besides being HoH, I did not want a monthly plan and I went with a "Pay-Ahead" plan. The monthly plans had good phones but I could not afford the plans of about $30 per month, minimum, for something I would not use much. It took a lot of time and aggravation, even with in-store testing, to find a pay plan and a half-decent compatible phone. Virgin Mobile has a decent pay-ahead plan and their Nokia 2115i "Shorty" works best if my Behind-The-Ear H.A. is OUTSIDE OF THE EARLOBE instead of between the skull and earlobe. Nokia says the 2115i is CDMA.

The pay plan and phone were chosen as the ONLY apparent option DESPITE knowing that the phone had a choice-limiting proprietary headphone connector strip instead of generic plug.

In-store sales and telephone service people have generally never heard of HoH issues. Very few people recognize the HoH international symbol. The shopping experience was time wasting and frustrating due to uninformed employees (in-store and via phone) and uninformative packaging and web sites such as little-to-no C63.19 ratings. This was after the mandated dates. Some gave M but no T ratings. Since I do coil, no T rating is useless for me.

Nokia has a headset but the website appears to have no mention of "magnetic coupling" or "H.A. Compatible" and no C63.19 rating and the unit is websales only.

Nokia has a neckloop only, no silhouettes. The website did not list it with the phone. The neckloop has internal batteries; power from the phone would be rechargeable. The neckloop has no mic, which is OK because the phone mic can be used. The loop has a call answer switch: who needs it? If only two wires are needed for the loop, a generic plug connector could be used instead of a proprietary strip. There is no available strip connector-to-plug adaptor.

For radios, including transceivers, I use a Radio Shack 44-533 telephone recording coil. It can be strain-loop taped to a stripped headphone head band or just draped over the earlobe.

Precedence: Federal law requires public phone access. Cell phones should be held to the same standards. Public phones should have a blue grommet where the cord goes into the handset to indicate a Hearing Aid Compatible (HAC) phone that couples magnetically. (Non-Magnetically Coupled "Amplified Phones" are only OK for mild-moderate loss.)

Federal law requires packaging to show both M and T ANSI C63.19 compatibility ratings. It can be argued that the websites of the manufacturers and the service providers should also. Most cell phone and accessory labels, packaging, and websites do not appear to do so.

As to web access: "Nomensa publishes global audit with United Nations ... First ever global accessibility survey reveals only 3% of websites tested reach minimum levels" Nomensa.com w3.org/TR/WCAG10/#priorities.

ADA (American Disability Act) / FCC / Telecommunications Act 1996 Section 255: Hardware Access:
Instead of generic plug in, some headphone/mic sets have proprietary strip style connectors which limits or eliminates choice. The items are not usually sold even where the phones are sold and cannot even be specially ordered. They are website-only sales, cannot be tried in-store, and not everyone has/wants a credit card.

In today's economy, very few companies can afford to lose one tenth to one third of their market which is the Hard of Hearing. HoH folks many times perceive claims of sound clarity as false advertising. If

the goods or services do not provide access, people will not buy and companies lose sales, a big chunk of the market.

With cell phones locked into a specific carrier, a preferred compatible device chosen by the user may be useless on that carrier. A preferred device may not be available on a preferred service/payment plan. Just as a modern land line phone normally works on any phone company's line, any HoH-preferred cell phone should be able to work with any wireless provider.

Compatible phones may have to be infrared coupled to H.A.s. (Wireless phone-to-H.A. is not always as desirable.) Technology beyond a mic uses the choice of a magnetic coil instead of a microphone; the original use and why it is named the "T" or "telephone" "coil" or "switch" is to try to "hear better" on the phone. But here is a glitch: magnetic noise is now so common that communication by coil and use of A.L.D.s (Assistance Listening Device) is unreliable. With all the electric noise out there some of it will induce into the H.A. T-Coil as noise (EMI: Electro-Magnetic-Interference). This means that there is no HoH access if too near fluorescent lights, neon lights (gas or solid), inverters, electric motors, gas engines, power lines and panels, motion-detectors, TVs, VCRs, stereos, microwaves, or computers. It is now way past due to move beyond magnetic coupling to something else.

D.C.I. (Direct-Contact Infrared): direct-contact infrared emitter-to-sensor contact can eliminate ambient light interference. Several emitters would allow a choice of phone position. BTE (Behind The Ear) aids could have sensors on both sides for use in either ear.

{Analog and digital radio:
Even with all the advantages of the change, new devices must still be capable of receiving basic analog, AM (.5-30 MH minimum) and broadcast FM.}

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